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EXAMINER
CHEN, CHIA WEI A

ART UNIT	PAPER NUMBER
2622	

NOTIFICATION DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/537,275	PORTER ET AL.	
	Examiner	Art Unit	
	CHIA-WEI A. CHEN	2622	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *08 October 2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *29-53* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *29-53* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *27 May 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Applicant's election with traverse of Species I in the reply filed on October 8, 2009 is acknowledged. Applicant's reasons for traversal are persuasive and the requirement for restriction is withdrawn.

Specification

2. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Claim Objections

3. Claims 29 and 49 are objected to because of the following informalities:

4. The claim limitation "the captured video material" in claim 29, line 4 and in claim 49, line 4 lacks antecedent basis in the claim.

5. The claim limitation "the captured images" in claim 29, lines 9-10 and in claim 49, line 9 lacks antecedent basis in the claim.

Appropriate correction is required.

Claim Rejections - 35 USC § 101

6. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

The USPTO "Interim Guidelines for Examination of Patent Applications for Patent Subject Matter Eligibility" (Official Gazette notice of 22 November 2005), Annex IV, reads as follows:

> Descriptive material can be characterized as either "functional descriptive material" or "nonfunctional descriptive material." In this context, "functional descriptive material" consists of data structures and computer programs which impart functionality when employed as a computer component. (The definition of "data structure" is "a physical or logical relationship among data elements, designed to support specific data manipulation functions." The New IEEE Standard Dictionary of Electrical and Electronics Terms 308 (5th ed. 1993).) "Nonfunctional descriptive material" includes but is not limited to music, literary works and a compilation or mere arrangement of data.
>
> When functional descriptive material is recorded on some computer-readable medium it becomes structurally and functionally interrelated to the medium and will be statutory in most cases since use of technology permits the function of the descriptive material to be realized. Compare In re Lowry, 32 F.3d 1579, 1583-84, 32 USPQ2d 1031, 1035 (Fed. Cir. 1994) (claim to data structure stored on a computer readable medium that increases computer efficiency held statutory) and Warmerdam, 33 F.3d at 1360-61, 31 USPQ2d at 1759 (claim to computer having a specific data structure stored in memory held statutory product-by-process claim) with Warmerdam, 33 F.3d at 1361, 31 USPQ2d at 1760 (claim to a data structure per se held nonstatutory).
>
> In contrast, a claimed computer-readable medium encoded with a computer program is a computer element which defines structural and functional interrelationships between the computer program and the rest of the computer which permit the computer program's functionality to be realized, and is thus statutory. See Lowry, 32 F.3d at 1583-84, 32 USPQ2d at 1035.
>
> Claims that recite nothing but the physical characteristics of a form of energy, such as a frequency, voltage, or the strength of a magnetic field, define energy or magnetism, per se, and as such are nonstatutory natural phenomena. O'Reilly, 56 U.S. (15 How.) at 112-14. Moreover, it does not appear that a claim reciting a signal encoded with functional descriptive material falls within any of the categories of patentable subject matter set forth in Sec. 101.
>
> … a signal does not fall within one of the four statutory classes of Sec. 101.
>
> … signal claims are ineligible for patent protection because they do not fall within any of the four statutory classes of Sec. 101.

7. Claims 50-53 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter as follows. Independent claim 50 defines a "computer software having program code" embodying functional descriptive material. Independent claim 51 defines a "providing medium for providing program code" embodying functional descriptive material. However, the claims do not define a computer-readable medium or memory and is thus non-statutory for that reason (i.e.,

"When functional descriptive material is recorded on some computer-readable medium it becomes structurally and functionally interrelated to the medium and will be statutory in most cases since use of technology permits the function of the descriptive material to be realized" – Guidelines Annex IV). That is, the scope of the presently claimed "computer software having program code" and "providing medium" can range from paper on which the program is written, to a program simply contemplated and memorized by a person.

Normally, the claim would be statutory if the claims are amended to embody the program on "computer-readable medium" or equivalent.

However, the specification, at page 40 defines the claimed program code as *non-statutory* subject mater such as a "transmission or other providing medium"

A "signal" embodying functional descriptive material is neither a process nor a product (i.e., a tangible "thing") and therefore does not fall within one of the four statutory classes of § 101. Rather, "signal" is a form of energy, in the absence of any physical structure or tangible material.

Because the full scope of the claim as properly read in light of the disclosure encompasses non-statutory subject matter, the claim as a whole is non-statutory. The examiner suggests amending the claim to *include* a tangible computer readable media, while at the same time *excluding* the intangible media such as a transmission medium. Any amendment to the claim should be commensurate with its corresponding disclosure.

8. Claim 53 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter as follows. Claim 53 defines a "transmission medium" with descriptive material. While "functional descriptive material" may be claimed as a statutory product (i.e., a "manufacture") when embodied on a tangible computer readable medium, a transmission medium embodying that same functional descriptive material is neither a process nor a product (i.e., a tangible "thing") and therefore does not fall within one of the four statutory classes of § 101. Rather, "signal" is a form of energy, in the absence of any physical structure or tangible material.

Claim Rejections - 35 USC § 102

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

10. Claims 29, 33-39, 43, 46, and 49-52 are rejected under 35 U.S.C. 102(e) as being anticipated by Potts (US 6,593,956).

Claim 29, Potts teaches a video camera arrangement, in Fig. 3, comprising:

an image capture device (camera 14) having an associated lens (a lens is inherent in a camera) with an adjustable focus and/or zoom and/or aperture setting (col. 6, lines 21-23);

a face detector (video face location module 102) for detecting human faces in the captured video material and for generating face data identifying detected occurrences of faces in the captured video material (video face location module 102 analyzes video signals 24 to detect faces in a single video frame; col. 7, lines 59-61), the face detector being responsive to the lens focus and/or zoom and/or aperture setting and/or the start and end point of a contiguous video shot (It is inherent that the face locator detects a face based on the capture image frame which is, in turn, determined by the focus, zoom, or aperture of the optical system of the camera);

a data handling medium by which data representing the captured images is transmitted and/or stored, the data handling medium comprising a storage medium for storing the captured images (video frames 24 are stored as digital data in a memory storage unit; col. 7, lines 47-49) and a metadata store for storing metadata associated with the captured video material (track files that correspond to detected faces and stores parameters for that face, as well as track pan, tilt, range values of the camera; col. 12, lines 44, 50-52), the metadata including the face data generated by the face detector and at least one of the lens focus and/or zoom and/or aperture setting; and

a processor for generating data to be transmitted or stored by the data handling medium in dependence on the detection of faces in the captured images (processor in col. 6, line 67-col. 7, line 10; see also: coder/decoder 30 that compresses the audio and

video signals and supplies the signals to a network interface 40 which transmits the signals across a telecommunication network 42; col. 6, lines 54-60).

Claim 33, Potts teaches a camera arrangement according to claim 29, in which:

the face detector (video face location module 102) is operable to detect a probability of a human face being present in each field or frame of the captured video material (Video face location module 102 calculates face segments with spatial luma and temporal luma variances above a predetermined threshold to determine face segments that are likely true images of a face; col. 11, lines 14-17, 34-37 and col. 11, line 65-col. 12, line 7); and

the metadata store is operable to store a representation of at least one face from each contiguous sequence of captured video material, that face being the face having the highest associated probability from the contiguous sequence (Based on the above calculations, the face tracking module 106 updates the track files corresponding to the detected faces and stores parameters for those faces; col. 12, lines 35-45).

Claim 34, Potts teaches a camera arrangement according to claim 29, the camera arrangement being a unitary device (See Figs. 1-3).

Claim 35, Potts teaches a camera arrangement according to claim 29, the data handling medium being operable to store and/or transmit data representing captured audio material associated with the captured video material (coder/decoder 30

compresses the audio and video signals and supplies the signals to a network interface 40 which transmits the signals across a telecommunication network 42; col. 6, lines 54-60).

Claim 36, Potts teaches a camera arrangement according to claim 35, comprising a speech detector (audio source locator 28); and in which the face detector is responsive to a detection of speech in the captured audio material (see claim 55 of Potts).

Claim 37, Potts teaches a camera arrangement according to claim 35, having two or more associated microphones (microphone array 12), the processor and/or face detector being responsive to audio signals from the microphones to identify a face associated with a current speaker (framing module 116 uses audio information to frame a camera shot on a face of a single speaker or a group of speakers; see col. 19, line 10-15).

Claim 38, Potts teaches a camera arrangement according to claim 35, comprising logic, responsive to the face detector (frame locator 116 uses determination made by face locator 102), to derive a subset of at least some of the captured images for storage and/or transmission by the data handling medium (frame locator 116 can frame a camera shot to capture a single speaker or a group of speakers to transmit across the telecommunications network; col. 19, lines 29-31).

Claim 39, Potts teaches a camera arrangement according to claim 38, in which the subset comprises a cropped image containing at least each face detected by the face detector (frame locator 116 frames the camera shot to contain currently detected faces; see col. 19, lines 29-31, 34-37, and 44-52).

Claim 43, Potts teaches a camera arrangement according to claim 38, in which the subset, in respect of a captured image, comprises a cropped image representing a single detected face (frame locator 116 can frame a camera shot to capture a single speaker to transmit across the telecommunications network; col. 19, lines 29-31).

Claim 46, Potts teaches a camera arrangement according to claim 35, comprising logic, responsive to the face detector, to control the lens zoom and/or direction of the image capture device in dependence upon the face data (The results of the face tracking module 106 are used for framing camera shots to track a moving speaker; col. 12, lines 39-43).

Claim 49, Potts teaches a method of operating a video camera arrangement having an image capture device (camera 14) with an associated lens (a lens is inherent in a camera) having an adjustable focus and/or zoom and/or aperture setting (col. 6, lines 21-23), a storage medium for storing captured images (video frames 24 are stored as digital data in a memory storage unit; col. 7, lines 47-49) and a metadata store for

storing metadata associated with the captured video material (track files that correspond to detected faces and stores parameters for that face, as well as track pan, tilt, range values of the camera; col. 12, lines 44, 50-52), the method comprising the steps of:

detecting human faces in the captured video material and for generating face data identifying detected occurrences of faces in the captured video material (video face location module 102 analyzes video signals 24 to detect faces in a single video frame; col. 7, lines 59-61), the face detecting step being responsive to the lens focus and/or zoom and/or aperture setting and/or the start and end point of a contiguous video shot (It is inherent that the face locator detects a face based on the capture image frame which is, in turn, determined by the focus, zoom, or aperture of the optical system of the camera); and

generating data representing the captured images for storage and/or transmission, in dependence on the face data generated by the face detector (coder/decoder 30 compresses the audio and video signals and supplies the signals to a network interface 40 which transmits the signals across a telecommunication network 42; col. 6, lines 54-60);

in which the metadata includes the face data generated by the face detecting step and at least one of the lens focus and/or zoom and/or aperture setting (track files that correspond to detected faces and stores parameters for that face, as well as track pan, tilt, range values of the camera; col. 12, lines 44, 50-52).

Claim 50, Potts teaches computer software having program code for carrying out a method according to claim 49 (modules can be implemented by an appropriately programmed processor; col. 6, line 65-col. 7, line 3).

Claim 51, Potts teaches a providing medium for providing program code according to claim 50 (programmable logic arrays store instructions, i.e., program code, in flash memory; col. 7, lines 5-7).

Claim 52, Potts teaches a medium according to claim 51, the medium being a storage medium (programmable logic arrays store instructions, i.e., program code, in flash memory; col. 7, lines 5-7).

Claim Rejections - 35 USC § 103

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

12. Claims 30 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Potts (US 6,593,956) in view of Patton (US 6,408,301).

Claim 30, Potts teaches a camera arrangement according to claim 29, but does not expressly teach that the metadata store is arranged to store metadata on the same storage medium as the captured video material.

Patton teaches that the metadata store is arranged to store metadata (metadata associated with a captured image or motion sequence) on the same storage medium (DVD disk 16) as the captured video material (See Fig. 12 and col. 6, lines 42-47 and 60-65).

It would have been obvious to a person having ordinary skill in the art to have used the teaching of Patton with that of Potts in order to provide a system capable of automatically indexing and sorting a plurality of images for a faster and more intuitive user access. (See col. 1, lines 39-67 of Patton.)

Claim 31, Patton teaches that the metadata store comprises a removable storage device connectable to the camera arrangement (the image data is captured on removable media; see col. 3, lines 54-55).

13. Claim 32, 47, and 48 is rejected under 35 U.S.C. 103(a) as being unpatentable over Potts (US 6,593,956).

Claim 32, Potts teaches a camera arrangement according to claim 29, in which the metadata store comprises:

a storage device external to the camera arrangement (audio and video signals are transmitted via a telecommunication network 42 to a receiving video conference system; col. 6, lines 56-60);

but does not expressly teach a wireless link between the camera arrangement and the storage device.

However, **OFFICIAL NOTICE** is taken that wireless links, i.e., wireless telecommunications networks are well known and expected in the art. At the time the invention was made, it would have been obvious to a person having ordinary skill in the art to have provided a wireless link between the camera and the receiving storage device in order to remotely access and control the camera in a convenient manner.

Claim 47, Potts teaches a video conferencing arrangement (col. 6, lines 16-23) including the camera arrangement according to claim 35, comprising two or more video conferencing systems (col. 6, lines 59-60), each system arrangement having an associated display arrangement (It is inherent that a video conferencing system include a display to display at least the video data received from the remote participant.), the data handling medium being a transmission medium (telecommunications network 42) linking the two or more video conferencing systems.

Although Potts does not explicitly teach that both video conferencing systems are of the camera arrangement according to claim 35, it would have been obvious to a person having ordinary skill in the art to have used the camera arrangement taught by Potts to track moving speakers at both ends of the video conferencing.

Claim 48, Potts teaches a camera arrangement according to claim 35, but does not expressly teach wherein the camera arrangement is used for security monitoring.

However, it would have been obvious to a person having ordinary skill in the art at the time of invention to have recognized that the camera arrangement of Potts observes and follows a person (col. 12, lines 39-42) and could similarly be used as a security monitoring device to track a moving person in a given area.

14. Claims 40-42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Potts (US 6,593,956) in view of Edanami (US 6,297,846).

Claim 40, Potts teaches a camera arrangement according to claim 38, but does not teach that subset, in respect of a captured image, comprises a number of cropped images equal to the number of detected faces in that captured image, each cropped image representing one detected face.

Edanami teaches that a captured image (Fig. 19a) comprises a number of cropped images (three cropped images representing of Fig. 19C, D, E) equal to the number of detected faces in that captured image, each cropped image representing one detected face (Fig. 19) (See col. 20, lines 3-10).

It would have been obvious to a person having ordinary skill in the art to have used the teaching of Edanami with that of Potts in order to allow a remote user to choose a particular person to focus on by clicking his/her image in a group shot. This

allows a person to more clearly focus on the current speaker or another participant at the video conferencing location. (See col. 20, lines 6-10 of Edanami.)

Claim 41, Edanami teaches a user control for selecting display properties of each of the cropped images (operator can choose a particular person to focus on; col. 20, lines 8-10).

Claim 42, Potts teaches that the data handling medium is a transmission medium (telecommunication network 42), but does not expressly teach that the user control relates to a remote node of the transmission medium.

Edanami teaches wherein the display remote from the camera and the captured scene can be manipulated by the user (col. 20, lines 6-10).

It would have been obvious to a person having ordinary skill in the art to have used the teaching of the remote operator of Edanami with the teaching of video conferencing across the telecommunication network of Potts in order to view onscreen the desired remote participant in a videoconferencing system. (See col. 18, lines 33-42 of Edanami.)

15. Claims 44 and 45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Potts (US 6,593,956) in view of Kan (US 2003/0035479).

Claim 44, Potts teaches a camera arrangement according to claim 35, but does not expressly teach: comprising logic to alter a degree of data compression applied to portions of the image in dependence upon whether a face has been detected at those portions.

Kan teaches logic to alter a degree of data compression applied to portions of the image in dependence upon whether a foreground has been detected at those portions (A high compression rate is used in the still background while lower compression rate is used in the moving foreground; paragraph 0008).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have used the teaching of Kan with that of Potts in order to reduce amount of data compressed and transferred (See paragraph 0008 of Kan.).

Claim 45, Kan teaches that an apparatus operable to apply a harsher data compression to portions of a captured image not detected to contain a foreground (see paragraph 0008). It would have been obvious to a person having ordinary skill in the art to have recognized that the face of a moving speaker (taught by Potts) is the foreground of a captured image.

Conclusion

16. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Foote (US 6,774,917) discloses methods and apparatuses for interactive similarity searching, retrieval, and browsing of video.

Windle (US 6,686,970) discloses a multi-media editing method and apparatus.

Imagawa (US 6,961,446) discloses a method and device for media editing.

Fedorovskaya (US 2004/0101212) discloses an imaging method and system.

Fedorovskaya (US 2004/0101178) discloses an imaging method and system for health monitoring and personal security.

Inagaki (US 5,999,214) discloses an image pickup system and communication system for use in video conferencing where cropped images are displayed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to CHIA-WEI A. CHEN whose telephone number is (571)270-1707. The examiner can normally be reached on Monday - Friday, 7:30 - 17:00 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lin Ye can be reached on (571) 272-7372. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/C. A. C./
Examiner, Art Unit 2622

/NHAN T TRAN/
Primary Examiner, Art Unit 2622